



ALLIANT ENERGY

Alliant Energy
Worldwide Headquarters
222 West Washington Avenue
P.O. Box 192
Madison, WI 53701-0192

Office: 608.252.3311
www.alliant-energy.com

April 27, 2001

Mr. James D. Loock
Chief Engineer – Electric Division
Public Service Commission of Wisconsin
P.O. Box 7854
Madison, WI 53707-7854

RE: Compliance with Wis. Admin. 1-AC-164 Code ch. PSC 113 sections 0604, 0605, and 0615

Dear Mr. Loock:

On behalf of Wisconsin Power and Light Company I am enclosing documents to comply with Wis. Admin. 1-AC-164 Code ch. PSC 113 sections 0604 and 0605. The information for compliance with Wis. Admin. 1-AC-164 Code ch. PSC 113 section 0615, Copperweld Inventory, will be filed electronically this year and every four years.

Several items should be noted when reviewing the attached information. The outage performance data includes all outages regardless of duration. The miles reconstructed are not available by phase, however will be made available in subsequent years with an upgrade to the Geographic Information System (GIS). The total miles in service are not available by voltage level, however will be made available in subsequent years with an upgrade to the GIS. In late 2000, a new customer feedback system was implemented which provided the capability of tracking written complaints in addition to phone complaints.

If you or the Public Service Commission of Wisconsin staff have any questions related to this plan, you may contact me at (608) 252-5039.

Sincerely,

Terry Nicolai
Senior Manager, Wisconsin Regulatory Relations

CC: Steve C. Baker
Lonnie Bazal
Joe Ell
Richard Kraemer
John Larsen
Theresa Mulford
Bob Rusch
Barb Siehr

RECEIVED

APR 27 2001

Electric Division

Wisconsin Power & Light Company
PSCW 113 Sections 0604, 0605, and 0615 Report
April 27, 2001

PSCW 113.0604 2a) Overall Reliability

Over the past five years Wisconsin Power and Light customers on average have seen less than 1.5 outages per year. Additionally the average duration, with storms, is less than 3 hours. When looking at the year 2000, without storms, the average outage frequency is 1.26 per customer and the average duration is 1.97 hours. The evaluation of worst performing feeders indicates that major storms, which are outside of the control of WP&L, influence the reliability indices. Considering that WP&L operates more than 19,000 miles of distribution facilities in all or part of 34 counties and experienced several major storms in 2000, maintaining this level of performance is excellent.

Year 2000			
Zone	SAIFI	SAIDI	CAIDI
Baraboo	1.22	1.98	1.62
Beaver Dam	1.22	1.57	1.29
Beloit *	1.65	2.51	1.52
Dane County	1.06	1.51	1.42
Fond du Lac	1.00	1.68	1.68
Janesville	2.03	11.87	5.85
Mineral Point	1.13	1.56	1.38
Port Edwards	2.75	4.19	1.52
WPL Total	1.41	3.26	2.31
These are calculated using ALL customer outages (including major storms).			

- Note: Beloit also includes South Beloit Gas and Electric hours.
- In 2000 major storms accounted for over 31 million outage minutes or 39% of the total SAIDI hours.

PSCW 113.0604 2b) 5% worst performing circuits

<u>Zone</u>	<u>Circuit ID</u>	<u>Sub</u>		<u>Zone</u>	<u>Circuit ID</u>	<u>Sub</u>
Janesville	VIKN6442	VIK		Baraboo	PDSB1050	PDS
Janesville	JANN1236	JAN		Janesville	TRAN4094	TRA
Janesville	LIBN3524	LIB		Berlin	KESD1922	KES
Janesville	PVWN2250	PVW		Janesville	FOON445	FOO
Janesville	VIKN2258	VIK		Janesville	MLSN528	MLS
Janesville	VIKN2257	VIK		Berlin	AUBA443	AUB
Janesville	MLSN652	MLS		Beloit	MREJ1791	MRE
Janesville	VIKN2288	VIK		Dane County	BEEL1140	BEE
Baraboo	CADA344	CAD		Beaver Dam	NBDF760	NBD
Beloit	SHWJ680	SHW		Berlin	POEA663	POE
Janesville	TRAN637	TRA		Janesville	FOON2768	FOO
Janesville	TRAN616	TRA		Janesville	SUNN6606	SUN
Janesville	LIBN3522	LIB		Fond Du Lac	OAKP41	OAK
Janesville	JANN1234	JAN		Beloit	LAGM711	LAG
Janesville	JANN352	JAN		Baraboo	CADA190	CAD
Janesville	MLSN572	MLS		Baraboo	CADA401	CAD
Fond Du Lac	KTMP1815	KTM		Janesville	SUNN6605	SUN
Mineral Point	ELMK846	ELM		Fond Du Lac	OAKP42	OAK
Janesville	FOON276	FOO				

Feeder # VIK N6442
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	1107
SAIDI	<u>2798.75</u>
SAIFI	<u>3.62</u>
CAIDI	<u>773.85</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 490.5 and SAIFI would be 1.14. Another storm hit on 9/12/00 taking the line out where it is in poor condition. A couple of poles were replaced. Again, if this outage had not occurred, SAIDI would be reduced to 8.06 and SAIFI would be 0.15.

Solution/Action to be Taken:

Rebuild the 3-phase 2/0 Copper line constructed in 1936 and 1953 to 477 ACSR. Also, rebuild the 1936-266 copper along Delavan Drive to 477 ACSR.

Proposed Project Name(s)	Freedom Tie-Janesville <u>Janesville N1234 Rebuild</u>
Proposed Project Year(s)	<u>2002 and 2003</u>
Estimated BCR(s)	<u>12,049 and 1,188</u>

Justification(s) for No Action:

Feeder # JAN N1236
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>863</u>
SAIDI	<u>2292.86</u>
SAIFI	<u>6.35</u>
CAIDI	<u>361.03</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 363.42 and SAIFI would be 3.16. On 2/22/2000 we had a car vs. pole situation that took the entire circuit out for 4hrs 36minutes. If this had not occurred, SAIDI would be reduced to 87.42 and SAIFI would be 2.16.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

This circuit operates at 25 kV and has recently been rebuilt. After the conversion, the substation breaker experienced a lot of outages due to lightning. We removed the hi-current trip option and the problem was eliminated.

Feeder # LIB N3524
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>2287</u>
SAIDI	<u>1988.41</u>
SAIFI	<u>3.73</u>
CAIDI	<u>532.86</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 72.05 and SAIFI would be 0.94 on this circuit.

Solution/Action to be Taken:

This circuit is fairly long and serves 2287 customers on the Southeast side of Janesville. With the new Tripp substation being energized in 2001 because of the STH 11 bypass, this circuit will now be served from 3 circuits out of Tripp.

Proposed Project Name(s)	<u>Tripp Substation and circuit Getaways</u>
Proposed Project Year(s)	<u>2001</u>
Estimated BCR(s)	<u>Roadmove</u>

Justification(s) for No Action:

Feeder # PVW N2250
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>1873</u>
SAIDI	<u>1881.09</u>
SAIFI	<u>6.16</u>
CAIDI	<u>305.6</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 384.02 and SAIFI would be 8.90 on this circuit. The remaining outages that effected the entire circuit were storm or tree related along the overhead line west of I-90. This line is primarily back-lot and serves a large area in central Janesville. The only protection for the lengthy 3-phase line is the substation recloser.

Solution/Action to be Taken:

A large portion of this circuit is currently being rebuilt for a 25 kV conversion this summer. Another project will install a set of 5 automatic Scadamate switches for distribution automation on this sub-to-sub tie with JAN N1236. With these projects completed and the major storm data removed, this circuit should perform reliably.

Proposed Project	PVW N2250 25kv conversion
Name(s)	<u>JVL N1236-N2250 GOABs</u>
Proposed Project Year(s)	<u>2001, 2002, and 2003</u>
Estimated BCR(s)	<u>100, 9379</u>

Justification(s) for No Action:

Feeder # VIK N2258
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	697
SAIDI	<u>1541.45</u>
SAIFI	<u>1.77</u>
CAIDI	<u>869.66</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 9.28 and SAIFI would be 0.18. This was the only time the entire circuit was out of power.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

Freedom Plastics is a large customer (3 MW) on this circuit who is extremely power sensitive. We meet with them twice a year to discuss reliability concerns. They accepted the outage associated with the storm and are satisfied with the service they have been receiving. We have invested a lot of money on reliability enhancements for this circuit over the years and do not believe additional action should be taken.

Feeder # VIK N2257
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	330
SAIDI	1518.71
SAIFI	1.72
CAIDI	882.09
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 55.99 and SAIFI would be 0.30.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

The existing circuit is in good condition and has not experienced a lot of outages over the years.

Feeder # MLS N652
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>2956</u>
SAIDI	<u>1762.76</u>
SAIFI	<u>2.82</u>
CAIDI	<u>624.86</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 604.58 and SAIFI would be 1.22 on this circuit. Another storm hit on 9/12/00 taking the line out due to wind and trees. Again, if this outage had not occurred, SAIDI would be reduced to 14.78 and SAIFI would be 0.23.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

This circuit was rebuilt about 2 years ago and is in excellent condition. At that time, we installed a new circuit N3426 out of Milton Lawns sub which split N652 in about half. This was done to prevent overload and reduce the number customers on one circuit. Our Outage Management System that is used to track outages does not have this new circuit in its database. As a result, any outage on either circuit gets shown as an outage on N652. The Outage Management system is being updated to reflect the changes.

Feeder # VIK N2288
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	705
SAIDI	1599.58
SAIFI	2.13
CAIDI	751.28
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 54.05 and SAIFI would be 0.32.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

The existing circuit is a short transmission underbuild and is in good condition. It has not experienced a lot of outages over the years. Without the major storm, this circuit would have performed reliably.

Feeder # CADA344
Zone BARABOO
Distribution Engineer Jon Pernsteiner

# of Cust.	<u>240</u>
SAIDI	<u>1773.92</u>
SAIFI	<u>3.75</u>
CAIDI	<u>473.04</u>
Data Year	<u>2000</u>

Root Cause of Performance

The high SAIDI, SAIFI, and CAIDI values were caused by two outages and an OMS error. The first outage of 260,569 COM was caused by a tornado breaking multiple poles along the main feeder which locked out the sub recloser. The OMS error occurred when a switch downstream of the sub recloser was also calculated to be open by OMS. This added an additional 130,473 COM to the 260,569 COM, erroneously. The second outage of 28,846 COM was caused by a distribution conductor structural failure taking out the high side power transformer fuse.

Solution/Action to be Taken:

If the tornado outage and OMS error are removed the SAIDI is 144.37, SAIFI is 2.29, and CAIDI is 63.04.

The circuit recloser was replaced and the old one tested and found to be operating slower than required to coordinate with the high side power transformer fuse. The conductor failed due to very cold weather causing an over-tension condition in the conductor resulting in conductor metallurgical failure. New conductor was spliced into this phase reducing overall conductor tension.

Other lightning, wind and system related outages will be addressed with a proposed refurbishment project. This project will reduce SAIDI and SAFI to acceptable levels.

Proposed Project Name(s)	<u>CADA344 REFURB</u>
Proposed Project Year(s)	<u>2002-2003</u>
Estimated BCR(s)	<u>10000</u>

Justification(s) for No Action:

Feeder #	<u>SHWJ680-S</u>
Zone	<u>South East</u>
Distribution Engineer	<u>Kevin Kueng</u>

Total # of Customers	<u>1</u>
SAIDI	<u>1194.6</u>
SAIFI	<u>11.0</u>
CAIDI	<u>108.6</u>
Data Year	<u>2000</u>

Root Cause of Performance:

Of the nine OMS recorded outages on this circuit for 2000, seven were associated with the wrong circuit due to customer connectivity errors in the OMS system. One was a customer equipment problem. The remaining single outage was associated with lightning.

Solution/Action to be Taken:

This circuit is a dedicated feeder to the Beloit Corp Research facility. It consists of 5 poles to the primary metering point, of which two have capacitor banks on them, and one that has a gang-operated switch. Both capacitor banks and the GOAB should have arresters on them. After the metering point the customer has approximately ¼ mile of double circuit 336.4 ACSR overhead conductor. The single lightning related outage to this circuit looks as though it was on the customers overhead conductor because a downstream overhead-metering installation CT failed, and that the customer does not have any lightning protection on their overhead 12 kV system. Facilities Information Management group will correct the customer connectivity errors that exist.

Proposed Project Name(s)	<u>None</u>
Proposed Project Year(s)	<u></u>
Estimated BCR(s)	<u></u>

Justification(s) for No Action: Stated above

Feeder # TRA N637
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>1583</u>
SAIDI	<u>1539.2</u>
SAIFI	<u>2.86</u>
CAIDI	<u>537.77</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 46.94 and SAIFI would be 0.36 on this circuit.

Solution/Action to be Taken:

This circuit currently feeds out of the sub and taps into two(2) directions. One way feeds south to the downtown underground commercial area and the other feeds north to an overhead residential area. A project has been approved and is currently in Engineering to bring another circuit out of Traxler sub. This new sub circuit will feed the residential area to the north and the existing N637 sub getaway will feed the commercial area to the south.

Proposed Project Name(s)	<u>Traxler N637 Reconfigure</u>
Proposed Project Year(s)	<u>2001-2002</u>
Estimated BCR(s)	<u>440</u>

Justification(s) for No Action:

Feeder # TRA N616
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	1085
SAIDI	1399.97
SAIFI	2.94
CAIDI	475.45
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 199.86 and SAIFI would be 1.72 on this circuit.

Solution/Action to be Taken:

The portion of this circuit that feeds Mercy Hospital and Riverview Clinic is in excellent condition. The overhead portion north of the Hospital and Memorial Drive to CTY 14 is in poor condition and is currently being rebuilt. The rebuild will complete a sub-to-sub tie between Traxler and Russell and should help reduce outage duration.

Proposed Project Name(s)	Russell Distribution Feeders
Proposed Project Year(s)	2001, 2002
Estimated BCR(s)	2,734

Justification(s) for No Action:

Feeder # LIB N3522
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>184</u>
SAIDI	<u>1222.57</u>
SAIFI	<u>1.92</u>
CAIDI	<u>637.86</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 67.19 and SAIFI would be 0.53 on this circuit.

Solution/Action to be Taken:

This circuit is in good condition and serves several large customers (i.e. Seneca Foods, CTI and Janesville Products) that are each over 1 MW in load. With the new Venture substation being energized in March because of the STH 11 bypass, this circuit will now be served from 2 circuits out of Venture. Without the major storm data included, this circuit would be well below the reliability levels of concern.

A good portion of this circuit along Beloit Avenue will be rebuilt because of a Road-move project for General Motors.

Proposed Project Name(s)	<u>Venture Sub. & Getaways</u> <u>Beloit Avenue Road-move</u>
Proposed Project Year(s)	<u>2001</u>
Estimated BCR(s)	<u>Both are Road-move's</u>

Justification(s) for No Action:

Feeder # JAN N1234
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	325
SAIDI	1313.18
SAIFI	3.8
CAIDI	345.4
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 160.18 and SAIFI would be 1.65 on this circuit. There are several overhead portions along this circuit that are in poor condition and were constructed in 1936 and 1953. These areas have attributed to some of the outages.

Solution/Action to be Taken:

This circuit feeds a portion of a large customer (Freedom Plastics) in Janesville. It is also a backup for their main plant. Without the major storm data included, this circuit would be well below the reliability levels of concern. However, I have several projects approved to rebuild and upgrade portions of this circuit which should eliminate some future outages.

Also, this circuit has distribution automation switches installed that have been operational for the past 2 years. I believe that some of the outages were not full circuit outages since the switches have operated and our Outage Management System does not recognize them.

Proposed Project Name(s)	Court St; Rebuild Freedom Tie; JAN N1234 Rebuild
--------------------------	--

Proposed Project Year(s)	2001, 2002, 2003
--------------------------	------------------

Estimated BCR(s)	26; 12,049; 1,188
------------------	-------------------

Justification(s) for No Action:

Feeder # JAN N352
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>1287</u>
SAIDI	<u>1205.49</u>
SAIFI	<u>3.06</u>
CAIDI	<u>394.15</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 25.85 and SAIFI would be 0.55 on this circuit.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

Other than the major storm, this circuit has experienced very few outages. At this time, I believe it is operating adequately.

Feeder # MLS N572
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>638</u>
SAIDI	<u>1065.9</u>
SAIFI	<u>1.89</u>
CAIDI	<u>563.87</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 67.39 and SAIFI would be 0.34 on this circuit.

Solution/Action to be Taken:

This circuit is configured such that it only ties with another circuit out of the same sub (Milton Lawn). A project has been approved and is currently in Engineering that will re-configure the circuit so that it will be a sub-to-sub tie with Traxler substation. The project will also enable us to back-up both circuits, which we're unable to do at peak today.

Proposed Project Name(s)	<u>Traxler N637 Reconfigure</u>
Proposed Project Year(s)	<u>2001, 2002</u>
Estimated BCR(s)	<u>440</u>

Justification(s) for No Action:

Feeder # P1815 KETTLE MORRAINE SUB
Zone FDL
Distribution Engineer Steve Weston

Total Customers 280
SAIDI 1053.86
SAIFI 3.39
CAIDI 311.29
Data Year 2000

Root Cause of Performance

Outage reporting errors were discovered. The entire circuit was reported out when only portions were actually out. After correcting reporting errors SAIDI is reduced to 146.27 and SAIFI is reduced to 0.79. If storms of 8/22 and 9/2 are omitted from outage information SAIDI and SAIFI are reduced to 34.63 and 0.5 respectfully.

Solution/Action to be Taken:

Proposed Project
Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action: This feeder is a good performer if the outage data from large storms is omitted.

Feeder # ELM K846
Zone MINERAL POINT
Distribution Engineer Barry Bauman

# Customers	<u>195</u>
SAIDI	<u>460</u>
SAIFI	<u>10.89</u>
CAIDI	<u></u>
Data Year	<u>2000</u>

Root Cause of Performance: Vibrating wires has loosened lead head insulators, broken hand ties and damaged armor rod. The floating conductors made contact with a crossarm causing the substation recloser to go to lockout. A set of underslung switches has operational problems that increased restoration time. Twelve crossarms are damaged due to pin movement. Without lightning arresters on the underbuild there were several lightning related outages.

After the line is upgraded the projected SAIDI is 39.4 and the projected SAIFI is 1.21.

Solution/Action to be Taken: Install new pins, insulators, armor rod and preformed ties, on 35 structures. Install vibration dampers on 2.5 miles of line. Install lightning arresters on the center distribution phase on each transmission underbuild pole. Install one GOAB and replace 12 crossarms.

Proposed Project Name(s)	<u>ELM K846 STH 80 Refurb</u>
Proposed Project Year(s)	<u>2001</u>
Estimated BCR(s)	<u>31,330</u>

Justification(s) for No Action:

Feeder # FOO N276
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	164
SAIDI	899.35
SAIFI	5.36
CAIDI	167.91
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Footville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 326.86 and SAIFI would be 4.26. On 5/31 we had a car vs. pole situation, and on 4/29 an alley arm broke. If these had not occurred along with the major storm, SAIDI would be reduced to 67.34 and SAIFI would be 2.29.

Solution/Action to be Taken:

The existing overhead 3-phase circuit is fairly long, but is in good condition. It has not experienced a lot of outages over the years. There is a tap that feeds the village of Hanover, which is in poor condition. A project has been approved and is currently in Engineering that will rebuild the entire village. Without the problems mentioned above and the Hanover project completed, this circuit should perform reliably.

Proposed Project Name(s)	Hanover Rebuild
Proposed Project Year(s)	2002, 2003
Estimated BCR(s)	589

Justification(s) for No Action:

Feeder # PDS B1050
Zone BARABOO
Distribution Engineer Jon Pernsteiner

# of Cust.	<u>407</u>
SAIDI	<u>734.75</u>
SAIFI	<u>5.95</u>
CAIDI	<u>122.97</u>
Data Year	<u>2000</u>

Root Cause of Performance

The high SAIDI, SAIFI and CAIDI values were caused by four major outages and 13 lightning/storm related outages. The largest outage of 109,792 COM was caused by trees from high winds during a major storm. The second largest outage of 70,818 COM was caused by a vehicle breaking off a pole. The two remaining major outages of 39,826 COM and 24,300 COM were caused by the conductor breaking and locking out a recloser. There were of 13 outages involving 1269 customers which totaled 49,861 COM due to lightning related outages.

Solution/Action to be Taken:

If the major storm and vehicle outages are removed are the SAIDI is 302.00, SAIFI is 5.19, and CAIDI is 58.19.

Other lightning, wind and system related outages will be addressed with a proposed refurbishment project. This project will reduce SAIDI and SAFI to acceptable levels.

Proposed Project Name(s)	<u>PDSB1050 REFURB</u>
Proposed Project Year(s)	<u>2002-2003</u>
Estimated BCR(s)	<u>23540</u>

Justification(s) for No Action:

Feeder # TRA N4094
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	1524
SAIDI	824.28
SAIFI	2.25
CAIDI	367.15
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 73.61 and SAIFI would be 1.07 on this circuit.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

Other than the major storm, this circuit has experienced very few outages.

Feeder # KESD1922
Zone Port Edwards (listed as Berlin)
Distribution Engineer Mike Warntjes

Total # of Customers	553
SAIDI	<u>825.51</u>
SAIFI	<u>2.72</u>
CAIDI	<u>303.53</u>
Data Year	<u>2000</u>

Root Cause of Performance

Total customer outage minutes on this feeder were 431,644. Primary cause of outages in this area is trees (w/ wind). Major storm-related outages on 9/11/2000 accounted for 383,394 COM.

Solution/Action to be Taken:

Project will be submitted for a major rebuild of this feeder and also to create a tie to Shawano Substation. A portion of the feeder, which is currently difficult to access, will be re-routed if possible, resulting in shorter duration outages.

SAIDI would have been 120 (SAIFI 1.8) excluding the 9/11/2000 outages.

Proposed Project Keshena-Shawano Tie

Name(s) _____

Proposed Project Year(s) 2003-2004

Estimated BCR(s) 2,500

Justification(s) for No Action:

Feeder # FOO N445
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	526
SAIDI	786.71
SAIFI	2.18
CAIDI	360.31
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 25.42 and SAIFI would be 1.14 on this circuit.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

Other than the major storm, this circuit has experienced very few outages. It is an overhead circuit that feeds Footville and the rurals to the north. The overhead is in good condition and there are no future plans for rebuilds.

Feeder # MLS N528
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>350</u>
SAIDI	<u>783.51</u>
SAIFI	<u>4.14</u>
CAIDI	<u>189.43</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 339.18 and SAIFI would be 3.05 on this circuit. Another storm hit on 9/11/2000 taking the line out due to wind and trees. Again, if this outage had not occurred, SAIDI would be reduced to 76.43 and SAIFI would be 2.07.

Solution/Action to be Taken:

A portion of this circuit will be transferred to the new Russell substation when the circuit rebuilds are completed, which should help reduce customer outage minutes. Overall, the circuit is primarily overhead and in good condition.

Proposed Project Name(s)	<u>Russell Distribution Feeders</u>
Proposed Project Year(s)	<u>2001</u>
Estimated BCR(s)	<u>2,734</u>

Justification(s) for No Action:

Feeder # AUB A443
Zone Port Edwards
Distribution Engineer Mike Warntjes

Total # of Customers	845
SAIDI	<u>607.47</u>
SAIFI	<u>6.39</u>
CAIDI	<u>95.14</u>
Data Year	<u>2000</u>

Root Cause of Performance

Total customer outage minutes on this feeder were 512,546. There were six outages on the substation recloser, which accounted for 485,643 COM. Three outages caused by lightning (1- no cause found, assumed to be lightning) accounted for 323,211 COM. Another two outages caused by improper sag (which has been fixed) accounted for 109,134 COM. The final outage was caused by a vehicle accident, accounting for 53,298 COM.

Solution/Action to be Taken:

There were no common causes for the outages, but with several rebuilds taking place were we have had outages system performance should improve. There are four rebuild projects approved for this feeder, totaling \$326,176. Two (2) reclosers will be added where the feeder branches off to improve reliability.

Approved Project	AUB443, 477 Rebuild from Sub to AUB, WR# 78316
Name(s)	AUB433 A1268 Projects, WR# 78346 AUBA443 Rebuild 3.9 mi Brookside Rd, WR# 78345 <u>AUB443 Hwy 10 Convert 1.0 mi 2 ph to 3 ph, WR# 78319</u>
Project Year(s)	<u>2001,2002</u>
BCR(s)	<u>199, 10, 96, 497</u>

Justification(s) for No Action:

Feeder #	<u>MREJ1791-S</u>
Zone	<u>South East</u>
Distribution Engineer	<u>Kevin Kueng</u>

Total # of Customers	<u>441</u>
Reported SAIDI	<u>751.62</u>
Reported SAIFI	<u>4.06</u>
Reported CAIDI	<u>185.08</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In 1999 three S&C Scadamate switches were installed to increase the reliability of MREJ1791-S. For the reported outages, the Scadamate switches were not in the OMS system, even though they isolated three major outage occurrences in 2000: A bad riser terminator on 2/20, the lightning occurrence on 4/20, and a failed CT for a retired capacitor bank on 6/15. The Scada team in the year 2000 reduced MREJ1791 by 27,840 customer outage minutes. The remaining reported outages were: a planned house move, a squirrel on a transformer, two were related to broken cutouts, two were large storm related to tree problems, and finally two with cause of lightning. This circuit was last trimmed in 1998. Excluding the miss-reported outages, and the bad CT (eliminated on 6/15), the SAIDI would have been 112.28 with a SAIFI at 1.00.

Solution/Action to be Taken:

The lightning related outages filter to the top of the remaining customer outage minutes. Scadamate J401 had one lightning outage along with J1482. The majority of line downstream of J401 is underbuild on a 69 kV line. I recommend that additional lightning protection be installed on this circuit using the current Alliant standard: arresters every third structure, or every structure with an arrester on the center distribution phase for underbuild structures.

Proposed Project Name(s)	<u>MREJ1791-S Circuit Refurb</u>
Proposed Project Year(s)	<u>2002</u>
Estimated BCR(s)	<u>34539</u>

Justification(s) for No Action

Feeder # BEEL1140
Zone Dane County
Distribution Engineer Jerry Batson

# of Cust.	<u>370</u>
SAIDI	<u>726.56</u>
SAIFI	<u>3.01</u>
CAIDI	<u>241.54</u>
Data Year	<u>2000</u>

Root Cause of Performance:

The high SAIDI, SAIFI, and CAIDI values were caused by three outages. The first outage of 216,648 COM happened during a major storm and was miscalculated due to an OMS error. The second outage of 34,317 COM was caused by a line connector failure. The third outage of 18,718 COM was caused by squirrel on the sub buss.

Solution/Action to be Taken:

If the OMS error is removed the SAIDI is 146.7, SAIFI is 2.08, and CAIDI is 70.7.
Wildlife protection was installed at the buss to help prevent future animal outages.

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

I analyzed the feeder for potential signs of mechanical failure. I looked at its outage history for conductor failure, and I also performed a visual check for splices. At this time the circuit appears to be mechanically sound.

Feeder # : North Beaver Dam (NBD) F760

Zone: Beaver Dam

Distribution Engineer: Alan Damyen

Total # of Customers	<u>149</u>
SAIDI	<u>532.14</u>
SAIFI	<u>1.01</u>
CAIDI	<u>525.00</u>
Data Year	<u>2000</u>

Root Cause of Performance:

Because of the construction of the second 69/12 substation transformer at the Third Street Substation along with other construction of 12KV feeders, feeder F760 was tied with feeder F26 which comes out of the Third Street Substation. A storm came through the City of Beaver Dam and lightning hit F26 feeder near the Third Street Substation. This fault on F26 caused the substation recloser F760 to go to lockout. No faults or outages occurred on feeder F760. The revised SAIDI, SAIFI and CAIDI for F760 should be reduced approx. to zero.

Solution / Action to be Taken:

No action taken, see Justification for No Action, below.

Proposed Project: None
Name(s) _____
Proposed Project Year(s) _____
Estimated BCR(s) _____

Justification for No Action:

No action will be taken on feeder F760 because the fault, from lightning, actually occurred on feeder F26, out of the Third Street Substation. These two 12KV feeders were tied together, from the North Beaver Dam Substation, because of the new construction taken place due to the addition of the second 69/12 KV transformer at the Third Street Substation. Note, there are no outages, except for the above mentioned, reported for F760 in the year of 2000.

Feeder # FOO N2768
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	6
SAIDI	411.7
SAIFI	1.67
CAIDI	246.53
Data Year	2000

Root Cause of Performance:

In early August, a major storm hit Footville causing numerous outages. If this storm had not occurred, SAIDI would be reduced to 18.2 and SAIFI would be 0.5 on this circuit.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

Other than the major storm, this circuit has experienced very few outages. It is an overhead sub-to-sub tie that feeds the rurals south of Footville to Orfordville. There are 6 residential and rural customers on this circuit and one (1) of them was out for 39.35 hrs during the storm. Without that outage, reliability levels would be below the levels of concern. The overhead transmission underbuild is in good condition and there are no future plans for rebuilds.

Feeder # SUN N6606
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>534</u>
SAIDI	<u>685.33</u>
SAIFI	<u>3.48</u>
CAIDI	<u>196.93</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. Our Outage Management System (OMS) also listed an outage on 11/1/2000 affecting 501 customers for 123 minutes. It said that fuse N6340-50T was blown due to a raccoon on the riser. When in fact, that fuse had blown but it only serves 1 customer. If the storm had not occurred and the outage on 11/1 was corrected, SAIDI would be reduced to 100.82 and SAIFI would be 1.72 on this circuit.

Solution/Action to be Taken:

None

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action:

Other than the major storm, this circuit has experienced very few outages. It was converted to 25 kV about 2 years ago and is in excellent condition.

Feeder # P41 OAKFIELD SUB
Zone FDL
Distribution Engineer STEVE WESTON

Total Customers 417
SAIDI 699.87
SAIFI 2.27
CAIDI 294.74
Data Year 2000

Root Cause of Performance

Outage reporting errors were discovered. The entire circuit was reported out when only portions were actually out. SAIDI is reduced to 121.07 and SAIFI is reduced to 0.13. If the storms on 8/22 and 9/2 are removed from the outage info, the SAIDI and SAIFI indices go to 8.13 and 0.13 respectfully.

Solution/Action to be Taken:

Proposed Project Name(s) CTH T West of FDL
Proposed Project Year(s) 2002
Estimated BCR(s) 868

This project should help with storm outages due to lightning.

Justification(s) for No Action: The circuit is a good performer once reporting errors and storms are removed.

Feeder #	<u>LAGM711-S</u>
Zone	<u>South East</u>
Distribution Engineer	<u>Kevin Kueng</u>

Total # of Customers	<u>1002</u>
Reported SAIDI	<u>435.9</u>
Reported SAIFI	<u>6.86</u>
Reported CAIDI	<u>63.56</u>
Data Year	<u>2000</u>

Root Cause of Performance:

There was a total of 431,443 customer outage minutes; 45% of the outages were related to trees, 19% to lightning, 18% to unavoidable, 10% to wildlife, 8% to unknown, and 1% to system equipment.

Solution/Action to be Taken:

M711-S is 51.0 circuit miles in length. The circuit was tree trimmed in 1997-1998 and refurbished in 1999. Six miles of the three-phase line installed in 1967 was rebuilt in 2000 due to the Hwy 50 road project. In looking at the tree trimming cycle, M711 should be scheduled for trimming in 2002 to reduce the number of tree related outages. The 6 mile rebuild should help reduce the number of substation recloser lockouts due to lightning and animals. Eliminating the tree related outages with trimming in 2002 would drop SAIDI, SAIFI respectively to 158.89, and 3.18. Also eliminating two recloser M711-S outages due to wildlife and lightning (associated to the 6 mile rebuild), drops SAIDI to 48.20, and SAIFI to 1.19.

Proposed Project Name(s)	<u>Tree trim circuit M711-S.</u>
Proposed Project Year(s)	<u>2002</u>
Estimated BCR(s)	<u>94580</u>

Justification(s) for No Action:

Feeder # CADA190
Zone BARABOO
Distribution Engineer Jon Pernsteiner

# of Cust.	<u>92</u>
SAIDI	<u>530.24</u>
SAIFI	<u>1.28</u>
CAIDI	<u>413.41</u>
Data Year	<u>2000</u>

Root Cause of Performance

The high SAIDI and CAIDI values were caused by two events. The first outage of 13,503 COM was caused by a distribution conductor structural failure taking out the high side power transformer fuse. Six of the remaining seven outages on this feeder happened at the same time and were caused by high winds during a tornado. These six outages were responsible for 35,149 COM.

Solution/Action to be Taken:

If the tornado outages are removed the SAIDI is 147.95, SAIFI is 1.01, and CAIDI is 146.48.

The circuit recloser was replaced and the old one tested and found to be operating slower than required to coordinate with the high side power transformer fuse. The conductor failed due to very cold weather causing an over-tension condition in the conductor resulting in conductor metallurgical failure. New conductor was spliced into this phase reducing overall conductor tension.

Other wind and system related outages will be addressed with a proposed refurbishment project. This project will reduce SAIDI and SAFI to acceptable levels

Proposed Project Name(s)	<u>CADA190</u>
Proposed Project Year(s)	<u>2002-2003</u>
Estimated BCR(s)	<u>6000</u>

Justification(s) for No Action:

Feeder # CADA401
Zone BARABOO
Distribution Engineer Jon Pernsteiner

of Cust. 257
SAIDI 584.16
SAIFI 2.25
CAIDI 259.62
Data Year 2000

Root Cause of Performance

The high SAIDI, SAIFI and CAIDI values were caused by two events. The first outage of 30,096 COM was caused by a distribution conductor structural failure taking out the high side power transformer fuse. Five of the remaining six outages on this feeder happened at the same time and were caused by high winds during a tornado. These five outages were responsible for 119,495 COM.

Solution/Action to be Taken:

If the tornado outages are removed the SAIDI is 118.72, SAIFI is 1.04, and CAIDI is 114.27.

The circuit recloser was replaced and the old one tested and found to be operating slower than required to coordinate with the high side power transformer fuse. The conductor failed due to very cold weather causing an over-tension condition in the conductor resulting in conductor metallurgical failure. New conductor was spliced into this phase reducing overall conductor tension.

Other wind and system related outages will be addressed with a proposed refurbishment project. This project will reduce SAIDI and SAFI to acceptable levels.

Proposed Project Name(s) CADA401 REFURB
Proposed Project Year(s) 2002-2003
Estimated BCR(s) 8560

Justification(s) for No Action:

Feeder # SUN N6605
Zone JANESVILLE
Distribution Engineer PAT RUNDE

# Customers	<u>214</u>
SAIDI	<u>724.73</u>
SAIFI	<u>2.79</u>
CAIDI	<u>259.76</u>
Data Year	<u>2000</u>

Root Cause of Performance:

In early August, a major storm hit Janesville causing numerous outages. Our Outage Management System (OMS) also listed an outage on 11/1/2000 due to a raccoon on a riser. When in fact, the raccoon caused an outage on another circuit, N6606, out of Sunrise. If the storm had not occurred and the outage on 11/1 was corrected, SAIDI would be reduced to 220.9 and SAIFI would be 1.26 on this circuit. Another outage occurred on 12/13/2000 due to the line falling down from the cold weather. If this had not happened, SAIDI would be reduced to 37.9 and SAIFI would be 0.26.

Solution/Action to be Taken:

A portion of this circuit is getting rebuilt and converted to 25 kV, which should help reduce outage levels. Overall, the circuit is primarily overhead and in good condition.

Proposed Project	STH 11 & USH 14 Roadmove
Name(s)	<u>JVL 25kV Project 2-HWY 14 East of O</u>
Proposed Project Year(s)	<u>2002</u>
Estimated BCR(s)	<u>Roadmove and 47</u>

Justification(s) for No Action:

Feeder # P42 OAKFIELD SUB
Zone FDL
Distribution Engineer Steve Weston

Total Customers 278
SAIDI 494.41
SAIFI 4.48
CAIDI 110.45
Data Year 2000

Root Cause of Performance

When the outage reporting errors are corrected, the SAIDI and SAIFI indices are reduced to 153.47 and 1.66 respectfully. With the outages from the storms on 8/22 and 9/2 removed the indices are further reduced to 115.98 and 1.43. The majority of the points(SAIDI=78.0 and SAIFI=1.0) come from a pole top fire during a snowstorm.

Solution/Action to be Taken:

Proposed Project

Name(s) _____

Proposed Project Year(s) _____

Estimated BCR(s) _____

Justification(s) for No Action: Without the storm outages the feeder is a good performer. The average SIADI for the last four years is 66.47.

PSCW 113.0604 2c) Alternate circuit performance measurement

Wisconsin Power and Light used standards designated in 113.0604 2a).

PSCW 113.0604 2d) Accomplishment of improvements in prior reports

Because this is the first year that reporting is required there is no information available from past years.

PSCW 113.0604 2e) New reliability or power quality programs

- Wisconsin Power and Light is in the process of testing and evaluating distribution automation devices. The intent of the program is to determine the cost effectiveness of automation with respects to the reduction in outage minutes and its potential impact on customer satisfaction. WP&L plans to continue the evaluation of this technology in 2001 in the Janesville, Wisconsin Dells, and Platteville areas.
- Wisconsin Power and Light has implemented and completed several reliability programs over the past several years. In 2000 WP&L completed the replacement of all Aluminum Bells on the system. This was done to improve system reliability by replacing a component that had been determined to fail causing customer interruptions. Additionally, WP&L completed a program of adding or improving system grounding, adding or improving lightning protection, and replacement of poor performing equipment on major 3 phase systems. Both programs focused on the reduction of customer outages and annual customer outage minutes.

PSCW 113.0604 2f) Long range electric distribution plans

- Stray Voltage Rebuilds – WP&L's response to ninety-day stray voltage mitigation has been a high priority since PSCW Docket 05-EI-108 in our long range rebuild plans. In 2000 WP&L invested \$2,462,920 in 48 rural rebuild projects to address concerns with stray voltage or primary neutral voltages. Constructions for 90-day projects were completed in an average of 65 days, with removal of the neutral isolator averaging 78 days with none of them exceeding 90 days. Customer satisfaction surveys returned by 150 customers that had stray voltage investigations conducted on their farms indicate that 95.3% of them rank WP&L good to excellent in the overall level of service provided for the stray voltage inquiry.
- System Studies – 2 major rural studies and 1 urban study were completed in 2000. The studies included the review of system age, copperweld conductor, outage performance, voltage, capacity, and other operating items to insure safe and reliable operations of the system. Rebuilds identified for possible construction in the next several years were evaluated with the GAP tool and added to the prioritized construction list. This list is provided to commission staff quarterly for review. Additionally, the distribution planning staff for WP&L has increased from 4 planners with focus on both transmission and distribution to 5 planners with focus on distribution only.
- High Neutral – WP&L has begun the process of identifying the location, clearance, prioritization, and replacement plan of all high neutral construction. WP&L will file a finalized plan late 2001 with the PSCW that detail what actions will be taken.
- Copperweld Replacement – WP&L continues to place a priority on the replacement of copperweld conductor with the GAP process per the agreement reached in PSCW Docket 6680-UM-100. In the evaluation of system problems copperweld conductor and older systems receive a higher level of priority to help justify its replacement and the timing of the replacement. WP&L continues to meet annually with PSCW staff to review the process and WP&L progress

PSCW 113.0604 3a) Miles reconstructed by phase

Year Reported For						
Year Reported In	1995	1996	1997	1998	1999	2000
1999	324	250	329	264	442	
2000					244	97

Note: This matrix contains the information reported in previous years to show changes in the amounts reported due to the time required to update WP&L's GIS system. An example is in the year 1999, 112 miles of line retired/reconstructed were reported. However, not all work orders completed in 1999 were mapped into the Geographic Information Services (GIS) by the date of the PSCW-113 reporting. As an update for the year 2000, we now report 244 miles retired/reconstructed in 1999.

It is also important to note that at this time miles retired/reconstructed is not tracked according to single- and three- phase circuits. The information will be made available in subsequent years with the upgrade to the GIS.

PSCW 113.0604 3b) Total miles by voltage level

	1995	1996	1997	1998	1999	2000
Miles in Service	17,841	17,924	18,457	18,954	19,256	19,322
Under 22 kV						19,238
22 to 30 kV						85
31 to 40 kV						-
41 to 50 kV						-
51 to 70 kV						-
Over 70 kV						-

Note: The breakout by voltage level of the miles in service is an estimate at this time. This information will be made available in subsequent years with the upgrade to the GIS.

PSCW 113.0604 3c) Monthly average speed of answer for calls

CUSTOMER SERVICE & BILLING						
	Number of calls to live agent	Number of calls to VRU	TOTAL queue time for a live agent (secs)	TOTAL queue time for VRU ¹	OVERALL Speed of Answer (secs) ²	Live Agent Speed of Answer (secs) ³
Jan	36,495	4,053	512,997	5,962	12.80	14.06
Feb	37,850	4,180	617,062	5,769	14.82	16.30
Mar	45,943	4,759	704,108	7,929	14.04	15.33
Apr	49,417	4,597	913,864	8,219	17.07	18.49
May	58,004	5,392	1,379,949	10,320	21.93	23.79
Jun	52,977	5,274	1,279,515	9,962	22.14	24.15
Jul	48,419	4,344	651,140	6,579	12.47	13.45
Aug	53,863	5,052	700,585	7,743	12.02	13.01
Sep	51,740	4,293	918,767	9,490	16.57	17.76
Oct	52,194	4,600	659,635	1,452	11.64	12.64
Nov	42,220	4,006	440,727	3,744	9.62	10.44
Dec	36,371	3,153	612,915	2,980	15.58	16.85
Year 2000	565,493	53,703	9,391,264	80,149	15.30	16.61

GAS & WATER EMERGENCIES⁴						
	Number of calls to live agent	Number of calls to VRU⁵	TOTAL queue time for a live agent (secs)	TOTAL queue time for VRU⁵	OVERALL Speed of Answer (secs)²	Live Agent Speed of Answer (secs)³
Jan	1,662	0	14,858	0	8.94	8.94
Feb	1,264	0	15,839	0	12.53	12.53
Mar	1,217	0	11,539	0	9.48	9.48
Apr	1,270	0	13,320	0	10.49	10.49
May	1,582	0	18,658	0	11.79	11.79
Jun	1,114	0	12,461	0	11.19	11.19
Jul	912	0	6,971	0	7.64	7.64
Aug	1,241	0	11,780	0	9.49	9.49
Sep	1,464	0	14,431	0	9.86	9.86
Oct	1,391	0	11,366	0	8.17	8.17
Nov	1,505	0	13,346	0	8.87	8.87
Dec	2,125	0	45,506	0	21.41	21.41
Year 2000	16,747	0	190,075	0	11.35	11.35

OUTAGES						
	Number of calls to live agent	Number of calls to VRU	TOTAL queue time for a live agent (secs)	TOTAL queue time for VRU¹	OVERALL Speed of Answer (secs)²	Live Agent Speed of Answer (secs)³
Jan	3,657	801	119,925	11,140	29.40	32.79
Feb	2,892	573	67,126	7,858	21.64	23.21
Mar	3,782	739	94,301	9,859	23.04	24.93
Apr	4,693	612	98,468	8,362	20.14	20.98
May	8,670	2,235	225,209	29,747	23.38	25.98
Jun	10,351	3,902	281,309	51,990	23.38	27.18
Jul	8,004	1,830	215,037	24,713	24.38	26.87
Aug	10,951	3,499	246,985	46,521	20.31	22.55
Sep	10,468	3,275	190,594	44,000	17.07	18.21
Oct	5,311	996	79,766	321	12.70	15.02
Nov	5,676	1,176	111,775	1,937	16.60	19.69
Dec	4,059	752	303,832	1,352	63.43	74.85
Year 2000	78,514	20,390	2,034,327	237,800	22.97	25.91

Notes: 1) Queue times for the VRU are larger prior to October because data did not allow us to separate out ring time from actual queue time. This was changed in October.

2) The calculation for OVERALL speed of answer is as follows:

$$\frac{\text{Total queue time for a live agent} + \text{Total queue time for VRU}}{\text{Number of calls to live agent} + \text{Number of calls to VRU}}$$

3) The calculation for Live Agent Speed of Answer is as follows:

$$\frac{\text{Total queue time for a live agent}}{\text{Number of calls to live agent}}$$

4) Gas and water emergency calls cannot be separated. This represents the total calls for gas and water emergencies.

5) All calls to the gas and water emergency line are handled by a live agent.

PSCW 113.0604 3d) Average number days to install and energize a new service

ELECTRIC NEW SERVICE DATA								
	1995		1996		1997		1998 *	
Month	Projects	Avg. Days	Projects	Avg. Days	Projects	Avg. Days	Projects	Avg. Days
Jan	67	3.8	237	4.7	315	4.3	261	*
Feb	45	4.5	195	4.8	184	4.7	273	*
Mar	49	4.8	177	4.5	175	4.3	251	*
Apr	109	4.5	453	4.7	366	4.7	525	*
May	174	4.8	612	5.0	434	4.9	636	*
Jun	134	4.2	655	4.8	477	4.9	670	*
Jul	115	4.8	690	4.7	422	5.0	799	*
Aug	160	4.5	690	4.7	317	4.9	702	6.6
Sep	223	5.2	560	4.8	215	4.6	695	8.8
Oct	268	5.0	650	5.1	214	4.2	727	8.7
Nov	324	4.6	616	4.9	119	4.3	714	9.9
Dec	265	4.8	466	4.9	87	5.0	687	14.1
Total	1933	4.6	6001	4.8	3325	4.7	6940	9.6

	1999*		2000*					
Month	Projects	Avg. Days	Projects	Avg. Days				
Jan	292	16.2	381	12.4				
Feb	201	12.6	316	14.1				
Mar	143	7.9	430	12.5				
Apr	483	10.4	557	12.1				
May	624	11.5	768	11.1				
Jun	666	13.0	775	17.3				
Jul	660	12.6	722	12.5				
Aug	751	12.6	842	12.4				
Sep	659	14.6	689	12.7				
Oct	830	11.3	811	16.1				
Nov	748	11.3	859	12.9				
Dec	729	13.7	554	17.2				
Total	6786	12.3	7704	13.6				

Note: WP&L implemented a new Work Management System (WMS) in 1997. A feature was designed into WMS to help automate the collection of new service data. The company began using the WMS system to capture new service data in August of 1998. The current version of WMS does not have the capability of excluding weekends, therefore, the days to install a service will include weekend days whereas data prior to 1998 included week (working) days only.

PSCW 113.0604 3e) Total number of customer complaints

PHONE COMPLAINTS					
	Complaints by Month				
	Month	1997	1998	1999	2000
	Jan	150	114	103	117
	Feb	185	77	125	122
	Mar	141	75	90	103
	Apr	110	97	105	79
	May	116	122	102	129
	Jun	168	160	142	82
	Jul	178	114	154	117
	Aug	136	120	119	180
	Sep	162	135	146	151
	Oct	135	121	138	157
	Nov	106	79	88	132
	Dec	79	82	89	138
	Total	1666	1296	1401	1507
Complaints by Category					
Code	Category				
100-199	Billing	1050	760	849	995
213-215	Billing (Payment Arrangement s)	65	81	126	129
	Other	412	286	275	231
804-806	Outages	60	126	110	89
807	Power Quality	0	2	0	7
406	Property Damage	78	33	39	53
412 & 914	Safety	1	8	2	3
	TOTAL	1666	1296	1401	1507

Note: In late 2000, WP&L implemented a new customer feedback system. Until implementation the information collected was only a record of phone complaints. The new customer feedback system will improve the accuracy of the information and therefore information gathered in the future may not be comparable to previous years' information.

PSCW 113.0604 3f) Total annual tree trimming budget and actual expenses

	1995	1996	1997	1998	1999	2000
Expenses	\$4,232,987	\$5,097,416	\$4,942,502	\$4,214,189	\$4,273,443	\$5,457,253
Budget	\$4,139,059	\$5,479,602	\$4,939,903	\$4,469,400	\$4,159,374	\$5,199,960

PSCW 113.0604 3g) Total annual miles of line tree trimmed

	1995	1996	1997	1998	1999	2000
Miles Trimmed						
Projected						3,021
Actual	3,230	3,135	3,355	2,242	2,198	2,848
Miles Treated					2,508	1,585

Note: The company line clearance program is emphasizing herbicide treatment as a more cost-effective means of vegetation management. For this reason, starting in 1999 Alliant Energy will begin reporting the miles of line treated with herbicide as well as the miles of line trimmed.

PSCW 113.0605 Initial historical reliability performance

OUTAGE PERFORMANCE DATA						
	1995	1996	1997	1998	1999	2000
CAIDI *	1.40	1.22	1.63	2.86	1.59	2.31
SAIDI *	2.16	1.64	2.21	5.12	2.24	3.26
SAIFI *	1.54	1.35	1.36	1.79	1.41	1.41

Note: In 1998 major storms accounted for over 57 million outage minutes or 48% of the total SAIDI hours.

In 2000 major storms accounted for over 31 million outage minutes or 39% of the total SAIDI hours.

CAIDI (Hrs of Interruption/Customer Interruptions)

SAIDI (Hrs of Interruption/System Customers)

SAIFI (Customer Interruptions/System Customers)

* Values are calculated using ALL reported customer outages (including major storms).

PSCW 113.0615 Inventory of Conductors

Copperweld Miles				
	8A	6A	Other	Total
Installed before 1/1/1949	1,503	693	32	2,228
Installed After 1/1/1949	681	1,005	26	1,713
Total	2,184	1,698	58	3,940